## REMARKS

This Amendment is in response to the Office Action dated November 15, 2007, in which claims 1-7 and 16-20 were rejected. The applicants respectfully request reconsideration and allowance of all present claims now pending, i.e. claims 1-7 and 16-20, in view of the following remarks.

## BOWEN DOES NOT ANTICIPATE CLAIMS 1 AND 16

Claims 1-7 and 16-20 were rejected under 35 U.S.C. 102 with reference to U.S. patent application no. 09/771,963 of Bowen. The applicants respectfully submit that the arguments presented in the Office Action to support this rejection are not based on an accurate characterization of the present claims. The applicants respectfully request that those arguments be reconsidered in light of the remarks herein, which demonstrate the lack of anticipation of the present claims over Bowen.

Bowen clearly does not disclose a device hardware abstraction layer and a platform hardware abstraction layer as recited in claims 1 and 16, or the elements of a configurable structure via abstraction layers as recited in claim 16, as further elaborated below.

Additionally, part of the argument for Bowen to anticipate the present claims 1 and 16 involves the argument that the system design process of Bowen teaches the reusable software block of the present claims. In the relevant passages cited in the Office Action, Bowen teaches a single series of steps, during a design phase of a system, of divvying up different system functions between hardware and software elements. Once the determination is made of what functions to assign to software and which to hardware, this division of labor is settled while the remaining aspects of design phase are completed and the system design is specified. A system design process simply does not read on a reusable software block.

## BOWEN DOES NOT A DISCLOSE DEVICE HARDWARE ABSTRACTION LAYER

The device hardware abstraction layer (HAL) of the present claims 1 and 16 was purported in the Office Action to be anticipated by the behavioral synthesis block 212 of Bowen.

However, this behavioral synthesis block does not read on the device hardware abstraction layer (HAL) of the present claims 1 and 16. The behavioral synthesis block 212 of Bowen is a process step of taking a desired behavioral description and producing a corresponding RTL description based on the behavioral description, as a step in a hardware design process.

This simply does not read on a device hardware abstraction layer comprised in a reusable software block, and in particular a layer a device hardware abstraction layer that defines offset values for registers of the peripheral device and defines a data structure for the peripheral device.

Additionally, while the Office Action cites examples from Bowen purported to read on a peripheral device, the cited examples are not involved with the behavioral synthesis process step 212 or with anything else purported to read on the device HAL of the present claim 1, in a manner that might reflect the elements as recited in claim 1. On the contrary, as in paragraph 0238 of Bowen, Bowen teaches merely that FIG. 10 discloses an illustrative typical workstation as a context in which a developer might carry out a design process. This does not relate to, for example, the illustrative configurable peripherals 108 comprised in integrated circuit 100 of FIG. 1 of the present application, as an illustrative example of a peripheral device as recited in the present claims 1 and 16.

Pages 2-3 of the Office Action include a further defense of this argument by arguing that the behavioral synthesis of Bowen "allows partition of software block that is capable of simply performing a 'type of function' per se on the said hardware system." However, even if true, this does not establish that Bowen teaches or suggests a device hardware abstraction layer as recited in the present claim 1. The "behavioral synthesis" process step of Bowen merely relates to specifying an RTL description that matches a pre-generated hardware behavioral description, not a device hardware abstraction layer.

## BOWEN DOES NOT DISCLOSE A PLATFORM HARDWARE ABSTRACTION LAYER

Similarly, the RTL Synthesis block 214 of Bowen is a process step in a hardware design process, not a platform hardware abstraction layer (HAL) comprised in a reusable

software block, as recited in the present claims 1 and 16. The Office Action argues that Bowen teaches that the RTL synthesis process step maps a hardware description to a given technology, and this is what is relied on in the Office Action for reading on the platform HAL of the present claims 1 and 16. However, what Bowen teaches here is merely a process step of specifying a given set of hardware that will conform to an RTL specification. This simply does not constitute a teaching of a platform hardware abstraction layer, comprised in a software block, that defines an address map of a system, and is adapted to initialize each instantiation of the peripheral device via calls to the device hardware abstraction layer. The RTL synthesis process step of Bowen does not involve calls to a device HAL, nor does it involve initializing each instantiation of a peripheral device. These elements of the present claim 1 are simply not addressed in the Office Action.

The Office Action contains a further defense of the argument that Bowen reads on the platform HAL of claim 1, by arguing that Bowen teaches a software block being run on a given piece of hardware, "and thus" provides an address map and register values, citing paragraph 0173 of Bowen. However, Bowen here discloses only such steps as defining the width of internal memory and stack addresses and defining registers; Bowen does not disclose initializing each instantiation of a peripheral device via calls to a device hardware abstraction layer.

## BOWEN DOES NOT DISCLOSE CONFIGURABLE STRUCTURE VIA HARDWARE ABSTRACTION LAYERS

Claim 16 of the present application also recites a device hardware abstraction layer defining a configurable structure for the peripheral device; and a platform hardware abstraction layer adapted to configure the structure of each particular instantiation of the peripheral device via the device hardware abstraction layer. As illustratively depicted in FIG. 3 of the present application, the platform HAL is adapted to configure the configurable structure for one or more instances of a peripheral device within an integrated circuit as defined by the device HALs for the peripheral devices. The Office Action has not shown how these elements might not

be novel, and Bowen simply does not recite a platform HAL and device HALs that define and enable such configurable structure for instances of a peripheral device within an integrated circuit. Additionally, the only purported examples of peripheral devices indicated in Bowen are clearly not instances of a peripheral device within an integrated circuit, as recited in claim 16.

As the foregoing remarks illustrate, therefore, Bowen does not anticipate claims 1 and 16 of the present application. The applicants therefore respectfully request that the rejection of claims 1 and 16 based on Bowen be reconsidered and withdrawn.


### BOWEN DOES NOT ANTICIPATE CLAIMS 2-7 AND 17-20

Claims 2-7 are dependent on claim 1, and claims 17-20 are dependent on claim 16. The present dependent claims (i.e. 2-7 and 17-20) therefore incorporate the novel subject matter of claims 1 and 16 respectively by their dependence thereon. Since claims 1 and 16 are novel over Bowen, as discussed above, the present dependent claims are also novel over Bowen due at the very least to the novel subject matter incorporated therein from their respective parent claims, in addition to further unique elements severally recited in the dependent claims. As an illustrative example of those additional novel elements, claims 2 and 17 also recite memory register locations adapted to be configurable during initialization, and an interrupt configuration, which is configured for the peripheral device during initialization of the system, which are not disclosed or suggested by Bowen.

The applicants therefore respectfully request that the rejection of claims 2-7 and 17-20 based on Bowen also be reconsidered and withdrawn.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 12-2252.

Respectfully submitted,

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